

Contingency Tables:

- Table of two categorical variables
- One variable is in columns and the other is in rows

Example:

	Gender		Total
	Male	Female	
Game	279	200	479
Commercials	81	156	237
Won't Watch	132	160	292
Total	492	516	1008

What % of males are watching for the game?

Need to figure out our numerator and denominator.

$$\left(\frac{\overset{\text{males}}{\text{\# watching game}}}{\text{total males}} \right) (100\%) =$$

$$\left(\frac{279}{492} \right) (100\%) = 56.7\%$$

What % of females are watching for the game out of everyone surveyed?

$$\left(\frac{\text{\# women watching for game}}{\text{total people surveyed}} \right) (100\%)$$

$$\left(\frac{200}{1008} \right) (100\%) = 19.8\%$$

Make contingency table of gender and politics (gender in columns, politics in rows).

	Gender		Total
	Male	Female	
Conservative	8 7	5	13 12
Moderate	3	8	11
Liberal	2	5	7
Total	12	18	30

What % of ^{all} students are moderate females?

$$\left(\frac{\# \text{ moderate females}}{\text{total } \# \text{ students}} \right) (100\%)$$

$$\left(\frac{8}{30} \right) (100\%) = 26.6\%$$

What % of all students are liberal?

$$\left(\frac{\# \text{ liberal students}}{\text{total } \# \text{ students}} \right) (100\%) =$$

$$\left(\frac{7}{30} \right) (100\%) = 23.3\%$$

Conditional Distributions:

- Based on contingency table
- Sometimes it is useful to have percentages in the table.

These are called conditional distributions.

- Do this either for rows or columns.

Example: For Rows

	Gender		Total
	Male	Female	
Game	279 $\frac{279}{479}$ 58.2%	200 $\frac{200}{479}$ 41.8%	479 100%
Commercials	81 $\frac{81}{237}$ 34.1%	156 $\frac{156}{237}$ 65.9%	237 100%
Won't Watch	132 $\frac{132}{292}$ 45.2%	160 $\frac{160}{292}$ 54.8%	292 100%
Total	492 $\frac{492}{1008}$ 48.8%	516 $\frac{516}{1008}$ 51.2%	1008 100%

★ Use row totals as denominator!

Column distribution table
for gender and phone type
(gender in columns, phone type in
rows).

Phone Gender	Male	Female	Total
iPhone	6 50%	13 72%	19 63%
Droid	4 33%	4 22%	8 27%
Neither	2 17%	1 6%	3 10%
Total	12 100%	18 100%	30 100%

Be careful!

- For row distributions, use row totals as your denominators.
- For column distributions, use column totals as your denominators.